

Work Order ID 79562

79562

Page 1

January-27-12 12:53:03 PM

Item ID: D2646 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Aft Cap
 Start Date: 27/01/2012 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 10/02/2012 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: M.L.J Date: 12/01/27 Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D2646	Rev C								

100 PURCHASING 0.00
100
 Purchasing Memo 0.00
 Purchasing Issue P/O: 16024 1-Spin as per Dwg D2646 2-Material release
 note required Siegrs

12-01-30
(50)

110 Receive & Inspect for Damage & Mat'l Certs 0.00
110
 Packaging Memo 0.00
 Packaging Ensure Material Release Note is attached

12/2/8 (50)

120 QC6- Inspect dimensions to drawing 0.00
120
 QC Memo 0.00
 Quality Control

12 02 11 (50)
counted

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 79562

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January-27-12 12:53:03 PM

Item ID: D2646 Accept ***N900040100*** Setup Start ***NS1***
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 Start Date: 27/01/2012 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 10/02/2012 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Small Fab Small Fab	Small Fab Memo 1-Drill using DT8026 as per Dwg D2646.2-Open holes to .297 as per Dwg D2646.3-Deburr	0.00 0.00	DL 12/2/14			50	50	FF	12-02-15
140 *140* QC Quality Control	QC5- Inspect part completeness to step on W/O Memo	0.00 0.00				W	12	02	16 (50)
150 *150* HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1 Memo	0.00 0.00				A	12	2-27	(50)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 79562

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January-27-12 12:53:03 PM

Item ID: D2646

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Item Name: Aft Cap

Stop ***NS2***

Start Date: 27/01/2012 Start Qty: 50.00

50

Cust Item ID:

Required Date: 10/02/2012 Req'd Qty: 50.00

50

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
160									
Powdercoat		0.00							
Powder Coating									
	Memo								
	START TIME: 11:30	OVEN TEMPERATURE:							
	FINISH TIME: 12:00								
170	QC3- Inspect Part Finish	0.00							
170									
QC		0.00							
Quality Control	Memo								
180	Small Fab	0.00							
180									
Small Fab		0.00							
Small Fab	Memo								
	Install inserts as per Dwg D2646								

50x d m 12/03/02

50x d m 12/03/07

50x d m 12/03/07

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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January-27-12 12:53:03 PM

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 Revision ID: Stop ***NS2***
 Item Name: Aft Cap
 Start Date: 27/01/2012 Start Qty: 50.00 ***50*** Cust Item ID:
 Required Date: 10/02/2012 Req'd Qty: 50.00 ***50*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC5- Inspect part completeness to step on W/O	0.00							
190									
QC	Memo	0.00							
Quality Control									
200	Identify as per dwg & Stock Location FP-2	0.00							
200									
Packaging	Memo	0.00							
Packaging									
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.00							
Quality Control									

12-03-7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

January-27-12 12:53:07 PM

Page 1

Work Order ID: 79562

79562

Parent Item: D2646

D2646

Parent Item Name: Aft Cap

Start Date: 27/01/2012

Required Date: 10/02/2012

Start Qty: 50.00

Required Qty: 50.00

Comments:

IPP: G05.08.22Hole size revised in Step 5KJ/JLM
IPP Rev:H Changed Inserts 07-02-19 JLM
IPP rev I changed inserts 07.06.11 EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

ALS7-1032-130

Purchased

No

110

Each

2,472.000

2

100

AI S7-1032-130

✕

11120671 (X100) 11/12/03/07

Insert

ALS4-1032-130

Location

Loc Qty

Loc Code

ST280

328

117717

27

118966

22

119775

279

ST281

71

119794

71

ST282

2073

119530

73

120181

2000

D2646P

Purchased

No

180

Each

50.0000

1

50

D2646P

Aft Cap

Location

Loc Qty

Loc Code

ST

50

78018

50

10/12/08 (50)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

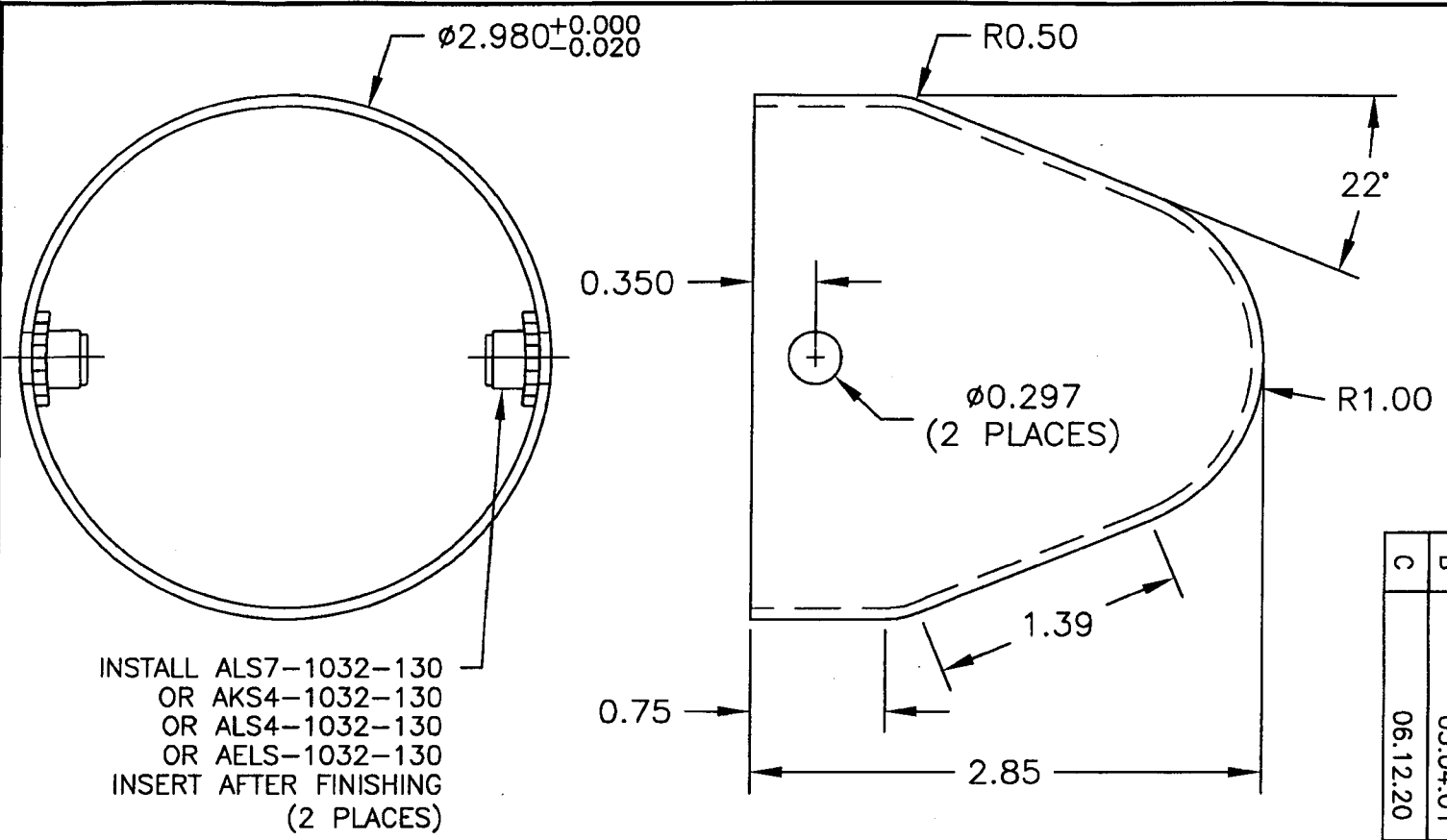
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	DS	DRAWN BY	PH	DART AEROSPACE USA, INC.
CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>	PORT HADLOCK, WA
DATE	06.12.20	DRAWING NO.	D2646	REV. C
		TITLE	AFT CAP	SHEET 1 OF 1
A	97.03.25	NEW ISSUE		SCALE 1:1
B	05.04.01	CHANGE TO CLOSED INSERTS		
C	06.12.20	CHANGE TO OPEN ENDED INSERTS		



D2646 AFT CAP

- 1) MATERIAL: ALUMINUM 1100-O 0.063 THICK (QQ-A-250/1)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT ASSEMBLY WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

STOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 79562 M.C.J.

RELEASED
07.02.20

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12/01/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO16026

Purchase Order Date 1/30/2012

PO Print Date 1/30/2012

Page Number 1 of 1

Order From :

VC-SIE001

SIEG'S MANUFACTURING LTD.
6236 - 205 STREET
LANGLEY, BC V2Y 1N7
CA

Contact Name

Vendor Phone 604 530 7455

Vendor Fax 604 530 7490

Vendor Account Nbr

Buyer

Brigitte Golden

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor # Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	D2646P	Aft Cap	2/3/2012 Yes	50.00 Each	FedEx Overnight	\$6.4458	\$322.29

Special Inst: As per DWG: D2646 Rev: C
B79562

PO Total:

\$322.29

Change Nbr: 1

Change Date: 1/30/2012

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable



Sieg's Manufacturing Ltd. Packing Slip

Metal Spinning & Metal Fabricating

6236 205 Street

Langley, BC, Canada V2Y 1N7

Phone:(604)530 7455 Fax:(604)530-7490

Check out our website: www.siegsfmfg.com

Packing Slip No.:

40353

Date:

02/06/2012

Page:

1

Sold to:	Ship to:
DART AEROSPACE LTD. 1270 ABERDEEN STREET HAWKESBURY, ONTARIO K6A 1K7	DART AEROSPACE LTD. 1270 ABERDEEN STREET HAWKESBURY, ONTARIO K6A 1K7
Order No.: 16026	Sold By: KAULBARS, ARLA
Shipped By:	Ship Date: 02/06/2012
Tracking No.:	

Item No.	Unit	Description	Quantity
D2646P	Each	Aft Cap	50
Comment:			



Sieg's Manufacturing Ltd.

Metal Spinning and Fabricating

6236 - 205 STREET, LANGLEY, B.C. V2Y 1N7
TELEPHONE: (604) 530-7455 • FAX: (604) 530-7490

INSPECTION REPORT

Date: Feb. 6/12
Customer: Dart Aerospace
Packing Slip: 40353
PO # 16026

Part#:	Quantity	Material	Check holes	Debur edges	Insp. By.
D 2646	50	063 1100-0	N/A	✓	Ø

Notes:

Material Certification Attached: ✓



ThyssenKrupp Materials NA
Copper and Brass Sales Division
95A Avenue 19044
V4N 4P2 Surrey
Tel.: 6048823493 Fax: 6048820686



Order number Customer PO MTR header	Ord-pos PO date MTR type	Del-pos Quantity Search criteria	Part description Customer Part Heat lot
C8A/1401020197 1271 Att_001.PDF	000010 08.12.2011 NCAP	900001 80.000 ST 930124417720110001	1100 Aluminum - O Aluminum Sheet 0.06300 28149601A
C8A/1401020197 1271 Att_002.PDF	000010 08.12.2011 NCAP	900002 8.000 ST 930124192420110001	1100 Aluminum - O Aluminum Sheet 0.06300 112843
C8A/1401020197 1271 Att_003.PDF	000010 08.12.2011 NCAP	900003 12.000 ST 930124417720110004	1100 Aluminum - O Aluminum Sheet 0.06300 28149601A

Delivery number	2401597801
Date	12.12.2011

D Jewell

SIEGS MANUFACTURING LTD.
6236 205 ST
LANGLEY V2Y 1N7
CANADA



CERTIFIED CHEMICAL & MECHANICAL ANALYSIS

Sold To: Copper & Brass Sales
P.O. Box 5116

Ship To: Copper & Brass Sales
404 Centura Court

Southfield MI 48086-5116

Spartanburg SC 29303

Customer PO Number: 5400111624-R01

Part No:

Ken-Mac Order/Item: 462255-1

Item Description : MA .06300 48.000 144.000 1100 0 MFREG MFREG

Heat/Lot: 28149601A Mill Tag No : 427978

KM Stock No: 167291 Case Tickets: 752416, 752417, 752418

----- Chemical Composition ----->

(Si)	(Cu)	(Fe)	(Zn)	(Al)
.1100	.1300	.6000	.0100	99.15

----- Mechanical Composition ----->

Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

Heat/Lot: 28149601A Mill Tag No : 427979

KM Stock No: 167292 Case Tickets: 752418, 752419, 752420

----- Chemical Composition ----->

(Si)	(Cu)	(Fe)	(Zn)	(Al)
.1100	.1300	.6000	.0100	99.15

----- Mechanical Composition ----->

Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

Total Pounds: 16,498

A Page 1

Bob Harley - Corporate Quality Manager

To the best of our knowledge, the aforementioned material conforms to all applicable standards.

L-A-B
ACCREDITED
#L2068-1

ALERIS ROLLED PRODUCTS, LLC
C/O ALERIS ROLLED PRODUCTS, INC.
P O BOX 480
LEWISPORT, KENTUCKY 42351

ALUMINUM CERTIFICATION SHEET

THIS IS TO ADVISE THAT THE MATERIAL PRODUCED FOR YOUR ORDER
CONFORMS TO THE SPECIFICATIONS OUTLINED BY THE ALUMINUM ASSOCIATION.
MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427978
ORDER: 00337316-000001
LOT : 281496
SUBLOT : 28149601A
DESCRIPTION: ALLOY 1100
TEMPER O
SIZE .0630 X 48.0000
CUSTOMER: THYSSENKRUPP MATERIALS, NA
17901 ENGLEWOOD DRIVE
CLEVELAND OH44130
PO # : 124138
PART # :

SPECS: ASTM B209

DATE TESTED: 09/13/2011

CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.13

DATE TESTED: 10/02/2011

MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,422

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT

L-A-B
ACCREDITED
#L2068-1

ALERIS ROLLED PRODUCTS, LLC
C/O ALERIS ROLLED PRODUCTS, INC.
P O BOX 480
LEWISPORT, KENTUCKY 42351

ALUMINUM CERTIFICATION SHEET

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MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427979
ORDER: 00337316-000001
LOT : 281496
SUBLOT : 28149601A
DESCRIPTION: ALLOY 1100
TEMPER O
SIZE .0630 X 48.0000
CUSTOMER: THYSSENKRUPP MATERIALS, NA
17901 ENGLEWOOD DRIVE
CLEVELAND OH44130
PO # : 124138
PART # :

SPECS: ASTM B209

DATE TESTED: 09/13/2011

CHEMICAL COMPOSITION - ASTM B1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.15

DATE TESTED: 10/02/2011

MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,441

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT



Skana Aluminum Co
Rolling Mill - Certified Metal

Certification of Properties and Analysis

Physical test: 112843 Aluminum Alloy: 1100 Temper: -O- Thickness: .0630

Tested For: Copper and Brass Sales

6156 PO No: 5400107660-R01

Chemical	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
Min Range	..	..	0.05	..	..	..	..	..	..	..	..
Max Range	.95 Si	+ Fe	0.20	0.05	..	..	..	0.1	..	0.05	..

Coil Ref. No.	1	2	3								
Tensile Strength KSI	13.03	13.12	12.81								
Yield Strength KSI	6.37	6.28	5.17								
% Elong. in 2 in.	31.70	31.70	31.60								
Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											
Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											
Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											
Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											

Remarks

Tested By: NH

Certified Date: 22 Sep 2011

NH .063 X 48.000 MF 3/3

ITEM# ALFLR01226

MEETS/EXCEEDS ASTM B209-10 SPECS

Thursday, September 22, 2011

MADE IN THE U.S.A.

QF 824-1-1

Page 1 of 1

Skana Aluminum Company

Rolling Mill - Certified Metal

Certification of Properties and Analysis

Physical test: 112843 Aluminum Alloy: 1100 Temper: -O- Thickness: .0630
 Tested For: Copper and Brass Sales 6156 PO No: 5400107660-

Chemical				Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
Min Range				..		0.05	..	..	..	..	..	..
Max Range				.95 Si	+ Fe	0.20	0.05	..	..	..	0.1	..	0.05	

1	13.03	5.37	31.70	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
				.193	.484	.087	..	..	..	..	..	..	..	..
				BAL										

2	13.12	5.28	31.70	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
				.185	.049	.089	..	..	..	..	..	..	..	..
				BAL										

3	12.81	5.17	31.60	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
				.182	.439	.082	..	..	..	..	..	..	..	..
				BAL										

Remarks

NH .063 X 48,000 MF 3/3

ITEM# ALFLR01226

MEETS/EXCEEDS ASTM B209-10 SPECS

Tested By: NH

Certified Date: 22 Sep 2011

Thursday, September 22, 2011

MADE IN THE U.S.A.

QF 824-1-2

Page 1 of 2



CERTIFIED CHEMICAL & MECHANICAL ANALYSIS

Sold To: Copper & Brass Sales
P.O. Box 5116

Ship To: Copper & Brass Sales
404 Centura Court

Southfield MI 48086-5116

Spartanburg SC 29303

Customer PO Number: 5400111624-R01

Part No:

Ken-Mac Order/Item: 462255-1

Item Description : MA .06300 48.000 144.000 1100 0 MFREG MFREG

Heat/Lot: 28149601A Mill Tag No : 427978
KM Stock No: 167291 Case Tickets: 752416, 752417, 752418

<----- Chemical Composition ----->
(Si) (Cu) (Fe) (Zn) (Al)
.1100 .1300 .6000 .0100 99.15

<----- Mechanical Composition ----->
Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

Heat/Lot: 28149601A Mill Tag No : 427979
KM Stock No: 167292 Case Tickets: 752418, 752419, 752420

<----- Chemical Composition ----->
(Si) (Cu) (Fe) (Zn) (Al)
.1100 .1300 .6000 .0100 99.15

<----- Mechanical Composition ----->
Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

otal Pounds: 16,498

A Page 1

Bob Harley

Bob Harley - Corporate Quality Manager

L-A-B
ACCREDITED
#L2068-1

ALERIS ROLLED PRODUCTS, LLC
C/O ALERIS ROLLED PRODUCTS, INC.
P O BOX 480
LEWISPORT, KENTUCKY 42351

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SUBLOT : 28149601A

CUSTOMER: THYSSENKRUPP MATERIALS, NA
17901 ENGLEWOOD DRIVE
CLEVELAND

PO # : 124138
PART # :

OH4413J

DESCRIPTION: ALLOY 1100
TEMPER O
SIZE .0630 X 48.0000

SPECS: ASTM B209

DATE TESTED: 09/13/2011

CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.15

DATE TESTED: 10/02/2011

MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

T SKID WEIGHT: 8,422

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT

L-A-B
ACCREDITED
#L2068-1

ALERIS ROLLED PRODUCTS, LLC
C/O ALERIS ROLLED PRODUCTS, INC.
P O BOX 480
LEWISPORT, KENTUCKY 42351

ALUMINUM CERTIFICATION SHEET

THIS IS TO ADVISE THAT THE MATERIAL PRODUCED FOR YOUR ORDER
CONFORMS TO THE SPECIFICATIONS OUTLINED BY THE ALUMINUM ASSOCIATION.
MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427979 CUSTOMER: THYSSENKRUPP MATERIALS, NA
ORDER: 00337316-000001 17901 ENGLEWOOD DRIVE
CLEVELAND OH44130
LOT : 281496
SUBLOT : 28149601A PO # : 124138
PART # :
DESCRIPTION: ALLOY 1100
TEMPER O
SIZE .0630 X 48.0000

SPECS: ASTMB209

DATE TESTED: 09/13/2011 CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	99.1;

DATE TESTED: 10/02/2011 MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,441

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT